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"Express Mail" mailing label number: EJ 247522226 US

Date of deposit: 25 July 2003

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**APPLICATION FOR LETTERS PATENT OF
THE UNITED STATES**

INVENTOR: RONALD HOAGLAND

TITLE OF INVENTION: TOOTHPASTE FORMULATION

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1
2 Toothpaste Formulation
3

4 Cross-Reference to Related Application.
5

6 This application claims the benefit of United States Provisional Patent Application Serial
7 No. 60/398,383, filed 25 July 2002, the contents of which are hereby incorporated by reference
8 herein.
9

10 Field of the Invention.
11

12 The present invention is a toothpaste formulation. In particular, the present invention is
13 a toothpaste formulation intended for use primarily by hunters, the formulation containing
14 ingredients to which no added scent has been added, to avoid the emission of odors from the
15 hunter which may indicate to the prey the presence of something unusual in its environment.
16

17 Background of the Invention.
18

19 The present invention is intended for the hunting market, consisting of approximately
20 15,000,000 licensed hunters in the United States. The present invention is intended for hunters
21 that need to exercise human, or foreign, scent control for the best potential of success. This
22 population, among others, can easily be identified as deer hunters. Deer hunters represent 92%
23 of the total US hunting license holders. An embodiment of the present invention can be more
24 narrowly targeted towards the serious deer hunter, which for purposes of the present
25 specification, is considered to be an individual characterized as one who may spend more than
26 10 days a year afield and who falls within one of the following groups: bow hunters;
27 muzzleloader hunters; shotgun hunters; and those who hunt using special and extended season
28 permits. These individuals regularly purchase scent control, cover, or attractant products.
29

30 Hunting Market Products
31

32 The national deer hunting market is very large and clearly identifiable by the above
33 criteria. Hunting periodicals have published data indicating that approximately 58% of their
34 readers purchase more than \$1,000 per year of the following deer hunting related products.
35

1 Major Categories of Products Purchased Annually (\$1,000)

- 2 • Firearms (all types, including bow hunting products)
- 3 • Clothing
- 4 • Camouflage
- 5 • Tree stands
- 6 • Deer attractant scents
- 7 • Cover scents (scents to cover-up the scent of the hunter)
- 8 • Scent control products

9

10 Published scientific studies clearly indicate that a deer's sense of smell is the number

11 one means of defense, survival, and procreation.

12

13 Primary Senses for Defense, Survival, and Procreation

- 14 1. Smell
- 15 2. Hearing
- 16 3. Sight
- 17

18 The sense of smell is followed closely by hearing as the second most relied upon sense,

19 with sight a distant third. Once something is detected as being "not normal" by one sense, a

20 deer will often try to confirm the source by using a second sense. However, smell does not

21 usually require confirmation unless curiosity becomes a factor. The intensity of the scent

22 detected by the animal can also be an indication of a potential threat; a certain concentration

23 detected by the animal may signal the presence of something within the area, but not at a level

24 to raise alarm. If the scent being detected increases, it could trigger either a perceived threat,

25 and cause the animal to flee, or if the scent is perceived as something innocuous or acceptable

26 to the animal, allow it to go about its routine.

27

28 Serious hunters regularly purchase and use many, if not all, of the scent control products

29 listed below but will generally use a "normal consumer" scented/flavored toothpaste to brush

30 their teeth. With the use of the scent control products, literally, a hunter's whole body and

31 equipment will be scent free but their mouth and breath will be "minty fresh". This minty, or other

32 flavor, breath although not offensive, is not part a deer's natural environment. Data indicate that

33 wary deer avoid any indication of something that is "not normal". The resulting theory is that

34 anything "foreign" represents a potential threat to deer, and may cause the deer to flee.

1
2 The major scent control product categories include products such as:

- 3 • Scent elimination spray
- 4 • Clothes wash
- 5 • Hair and body soap
- 6 • Underarm deodorant
- 7 • Scent control suits/clothing

8
9
10 This inventor is an avid hunter, and has searched for several years to find an oral care
11 product to use for brushing teeth without scent, or a product to eliminate or cover-up the scent
12 of toothpaste. The only option found for scent free brushing was plain baking soda, which wasn't
13 very pleasant. Although a mouthwash and chewing gum have been reported to have been
14 marketed, these products focused on the elimination of bacteria that cause odor and did not
15 cover-up the scents that are included in conventional toothpaste; this research during recent
16 hunting seasons has indicated that these products are no longer readily marketed.

17
18 A former chief executive officer of a pharmaceutical company that developed
19 and marketed a line of conventional consumer and specialty toothpastes informed this
20 inventor of the difficulties of developing such a product, noting that the limited need for
21 such a product within the general population was another likely reason for it not being
22 developed to date. Thus, there is a long-felt need in the market for oral care products,
23 such as a toothpaste or similar product, that a hunter can use for personal care, but
24 which will not have an odor that prey will perceive as being unusual, and potentially
25 cause it to flee.

26
27 A review of prior art references generally disclose dentifrice products containing odor-
28 eliminating agents. For example, Johnson, in U.S. Patent Application Publication No. US
29 2001/0031220 A1 ("the '220 application") and U.S. Pat. No. 6,340,447 B2 discloses using a
30 mouthwash containing up to 1% by weight of activated carbon as part of a regimen for a hunter
31 to use to reduce bodily scents prior to hunting. The '220 application discloses using a
32 mouthwash containing up to 1% (by weight) activated carbon, or activated charcoal as a
33 substitute, prior to hunting, to block odors. In published patent application U.S. 2002/0146383,

1 ("the '383 application") Johnson discloses using a zeolite to reduce a hunter's scent. The use of
2 a zeolite instead of activated carbon "overcomes the smutting problem that exists when
3 activated carbon is sprayed on hunter's apparel" (§134), and, by implication, when used in a
4 mouthwash. Aside from a mouthwash, the Johnson references make no suggestion about other
5 oral care products.

6
7 Donchi (U.S. Pat. No. 1,716,035) discloses using the combination of an activated
8 vegetable carbon material in conjunction with keiselguhr (an absorbent agent) in a toothpaste or
9 toothpowder formulation that contains sodium bicarbonate, saccharin, and flavorings such as oil
10 of wintergreen and oil of peppermint.

11
12 Fehr (U.S. Pat. No. 173,607) discloses a deodorizing and disinfecting toothpowder which
13 may be plain or perfumed, in which magnesium silicate and salicylic acid are mixed together in
14 a solvent such as alcohol, and then dried.

15
16 In U.S. Pat. No. 3,943,240 ("the '240 patent) Delaney et al. disclose a general dental
17 cream and toothpaste formulations, wherein sodium bicarbonate is the active agent. In a
18 related patent (U.S. Pat. No. 3,935,305, "the '305 patent") Delaney et al. disclose a similar
19 toothpaste formulation, in which calcium carbonate is the principal abrasive and a lesser amount
20 of sodium bicarbonate is an additional abrasive. In addition, the formulations may include
21 titanium dioxide, sodium lauryl sulphate, sodium saccharin, water, glycerol and flavorings.
22 Among the flavorings that could be added are oil or peppermint, spearmint, orange, lemon,
23 cinnamon, and others, but nothing specific is stated about scents or flavorings that would be
24 attractive to animals.

25
26 In U.S. Pat. No. 4,181,712 Rialdi discloses a toothpaste formulation comprising a
27 detergent base, a micronized silica gel and activated charcoal mixture in a formulation
28 containing no abrasive agents. Glycyrrhizin can be added as a flavoring, as well as
29 antimicrobial agents.

30
31 White (U.S. Pat. No. 5,117,821) discloses a hunting mask for purifying the breath of a
32 hunter, comprising a face mask having a one-way air intake valve, a tube for conducting the
33 hunter's breath away from the mask to an intake end of an air purification canister, and a one-
34 way discharge valve at the discharge end of the canister for controlled passage of breath to

1 ambient atmosphere.

2
3 Thus, the focus of many references has been the elimination of scents from the hunter.
4 None of these references suggest using scents to attract the prey animal towards the hunter's
5 position. However, it would appear that the problems of these references could be resolved by
6 enabling the hunter to maintain their normal oral care regimen, without the introduction of odors
7 or scents, as achieved by using an embodiment of the present invention.

1 Brief Summary of the Invention.

2 An object of the present invention is to provide an oral care product for use by hunters
3 whose composition comprises agents containing no added odors or scents.

4
5 Another object of the present invention is to provide a method of oral care for a hunter,
6 comprising applying a quantity of a dentifrice, such as a toothpaste, to the teeth, using a
7 composition that has no added scents or odors.

8
9 Still another object of the present invention is to provide an oral care product for use by
10 hunters whose composition comprises agents containing added odors or scents which may
11 either be attractive to animals, or which odors or scents would not be recognized by such
12 animals as being offensive to the animal.

13
14 Another object of the present invention is to provide a method of oral care for a hunter,
15 comprising applying a quantity of a dentifrice, such as a toothpaste, to the teeth, using a
16 composition that has comprises agents containing added odors or scents which may either be
17 attractive to animals, or which odors or scents would not be recognized by such animals as
18 being offensive to the animal..

19
20 The present invention is a method of preparing for hunting which comprises applying a
21 quantity of a toothpaste to the hunter's teeth, the toothpaste formulated to contain no added
22 scents or odors. The formulation provides hunters with the ability to practice their normal tooth
23 brushing routine, but without adding a scent, which if detected by the prey animal, could
24 compromise the hunter's objective of being scent free to avoid detection by the prey while
25 hunting. An embodiment comprises a mixture of calcium carbonate, a polyol; water; sodium
26 bicarbonate; sodium lauryl sulfate; titanium dioxide; guar gum, and sodium saccharin.

1 Detailed Description of the Invention.

2
3 Understanding the special needs of the avid deer hunter, there is a long-felt need for a
4 toothpaste or other oral care product made using a scent-free formulation. The majority of
5 conventional toothpaste formulations are soap based, with the added scents and flavorings
6 being necessary to mask the unfavorable soap taste.

7
8 The formulation of the present invention meets the following criteria.

9
10 It is a baking soda based product (sodium bicarbonate), which effects a natural mouth
11 odor elimination; has no soap taste; a sweetener is added for a tolerable taste; it has no obvious
12 smell; no Food and Drug Administration ("FDA") approval is needed because the composition
13 has been developed using known and approved materials; it is manufactured in an FDA
14 approved facility; and no dental product claims are being made that would require FDA
15 approval. No fluoride is added in one embodiment, thereby addressing certain regulatory
16 labeling issues. Other embodiments could include fluoride if necessary.

17
18 Thus, a hunter can maintain their normal routine of tooth care by brushing their teeth,
19 only using the toothpaste of the present invention prior to going out hunting, or even while in
20 the field. For purposes of the present specification, brushing one's teeth is also intended to
21 include brushing of dentures, bridges, dental implants, or other dental prostheses, and
22 can also include brushing the gums and/or the tongue, as commonly recommended by
23 dental professionals. Because there is no added scent or flavoring, there is reduced
24 likelihood of a cloud of odor building up around the hunter which would alert a prey animal to
25 a "non-natural" scent in its environment.

26
27 With a knowledge of a prey animal's favorite food, or foods that are appropriate to a
28 given season of the year, an embodiment of the present invention can be formulated to
29 attract the animal towards the hunter. For example, among the favorite foods of white tail
30 deer are acorns, apples, cranberries, beechnuts, corn, wheat, rye and a variety of
31 vegetation on which they routinely browse. Extracts of these could be used either to scent
32 or to flavor an embodiment of the present invention to attract the animal towards the hunter.
33 Similarly, the types of salts that are found in salt licks could also be incorporated into oral
34 care products, in order to attract the prey towards the hunter. As another example, and not
35 intended to be a limitation, brown bears are attracted to salmonberries and such a flavoring

could be added for use by bear hunters in certain regions. These flavorings could be used in concentrations ranging from approximately 0.01% to about 5% by weight of the formulation. Other scents or flavorings could also be added to the formulation, which may not be appealing to humans, may be recognized by the particular prey animal as one that is typical of its environment, and thus, would not indicate to the animal the presence of a potential threat, such as a hunter. This could include odors characteristic of the animal's favorite vegetation, a forest odor, or scent of other animals known to be acceptable to the prey.

While much of the present specification has been written based on the behavior of the North American white-tailed deer, it is to be understood that this is merely by way of illustration. Embodiments of the present invention can be used for other members of the deer family, such as, but not intended to be limited to, caribou, elk, moose and other antlered species. Embodiments of the present invention could also be used when hunting other animals, regardless of the environment or continent (i.e.,) whether in North America, central Africa, southern Asia and the like.

Example 1. Toothpaste Formulation:

The toothpaste formulation of the present invention has the following formulation:

	% by weight
Calcium Carbonate (Vicron 15-15)	20 -75
Polyol	10 - 30
Water	25 - 55
Sodium Bicarbonate #1	0.001 - 40
Sodium Lauryl Sulfate	0.001 - 20
Titanium Dioxide	0.1 - 10
Guar Gum	0.02 - 5
Sodium Saccharin	0.001 - 5

In addition to its formulation in a toothpaste, the present invention can be formulated as a dental cream, gel, or a toothpowder. Polishing materials are present in solid or pasty oral preparations. While calcium carbonate is the polishing agent in the formulation of the present invention, other materials can be utilized. While not intended to be limited, other examples of

1 suitable polishing materials include sodium metaphosphate, potassium metaphosphate,
2 tricalcium phosphate, dihydrated calcium phosphate, calcium pyrophosphate, magnesium
3 orthophosphate, trimagnesium phosphate, alumina, aluminum silicate, zirconium silicates, silica,
4 bentonite, and mixtures thereof. The polishing materials are generally present in an amount that
5 ranges from about 20% to about 80% by weight of the formulation. In a toothpaste formulation,
6 they are generally present in an amount ranging from about 20% to about 75%.

7
8 The polyol can be chosen from the group consisting of glycerol, polyethylene glycol,
9 sorbitol and others known to those skilled in the art.

10
11 The water content of toothpaste and dental creams is about 25% to about 55% by
12 weight.

13
14 Sweeteners may be selected from among the following compounds:

15 Water soluble sweeteners such as monosaccharides, disaccharides and
16 polysaccharides, including glucose, ribose mannose, galactose, fructose, sucrose, maltose,
17 partially hydrolyzed starch, corn syrup, sugar alcohols such as mannitol, sorbitol, or xylitol.

18 Water-soluble artificial sweeteners, such as sodium saccharin, cyclamate salts, aspartyl-
19 phenylalanine methyl ester, acesulfame-K, and the like. The amount of sweetener will vary, and
20 can range from about 0.001% to about 40% by weight of the formulation. Sodium saccharin is
21 used as the sweetener in the formulation of Example 1. Other natural and artificial flavorings
22 can be added, provided that they do not impart any additional scent to the formulation

23
24 Sodium bicarbonate is present in the range of about 0.001% to about 40% by weight of
25 the formulation.

26
27 Sodium lauryl sulfate is present in the range of 0.001% to about 20% by weight of the
28 formulation. Other surfactants known to those skilled in the art may also be utilized in the
29 formulation of the present invention.

30
31 Thickeners or gelling agents can be selected from guar gum, as used in the present
32 invention, or gum tragacanth, xanthan gum, pectin, carrageenans, agarose, alginates or starch.
33 Modified celluloses, such as carboxymethyl cellulose, ethyl cellulose, methylcellulose could
34 also be employed.

1
2 Fluoride-containing compounds may be added to the formulation of the present
3 invention. Exemplary fluorine-providing compounds are inorganic fluoride salts such as soluble
4 alkali metals, alkaline earth metals, and heavy metal salts, such as sodium fluoride, potassium
5 fluoride, ammonium fluoride, cuprous fluoride, zinc fluoride, stannic fluoride, stannous fluoride,
6 barium fluoride, sodium fluorosilicate, ammonium fluorosilicate, sodium fluorozirconate, sodium
7 monofluorophosphate, aluminum mono- and difluorophosphates, and fluorinated sodium
8 calcium pyrophosphate.

9
10 Colorants are often added to oral care formulations, and when present, include any of
11 the dyes approved for use in food drug and cosmetic applications, as known to those skilled in
12 the art, and which will not be further enumerated herein. As described above, the present
13 invention contains no added colorant.

14
15 The present invention is a toothpaste with no added scents, which effects a natural
16 short-term mouth odor control. In addition, other agents can be added to the base formulation
17 to provide antiplaque and calculus control, such as chlorhexidine or pyrophosphates.

18
19 Although reference is made herein to deer hunters, no such limitation is intended,
20 because the product can be used by hunters or other individuals who are concerned about
21 emitting odors that prey may consider as being "unnatural" to the environment.

22
23 Therefore, although the present invention has been described with a certain degree of
24 particularity, it is to be understood that the present disclosure is made by way of illustration, and
25 that numerous changes in the details of composition and concentration may be resorted to
26 without departing from the spirit and scope of the invention.